



TI-UK-cFREME
 UK Issue 2

Spirax Compact FREME Flash Recovery Energy Management Equipment

Pressure/temperature limits

Part	Maximum operating	
	Pressure	Temperature
Primary side (plant steam) condensate and flash steam	14 bar g	198°C
Secondary side (Boiler feedwater)	25 bar g	170°C

Materials

Control valve(s)
 Carbon steel

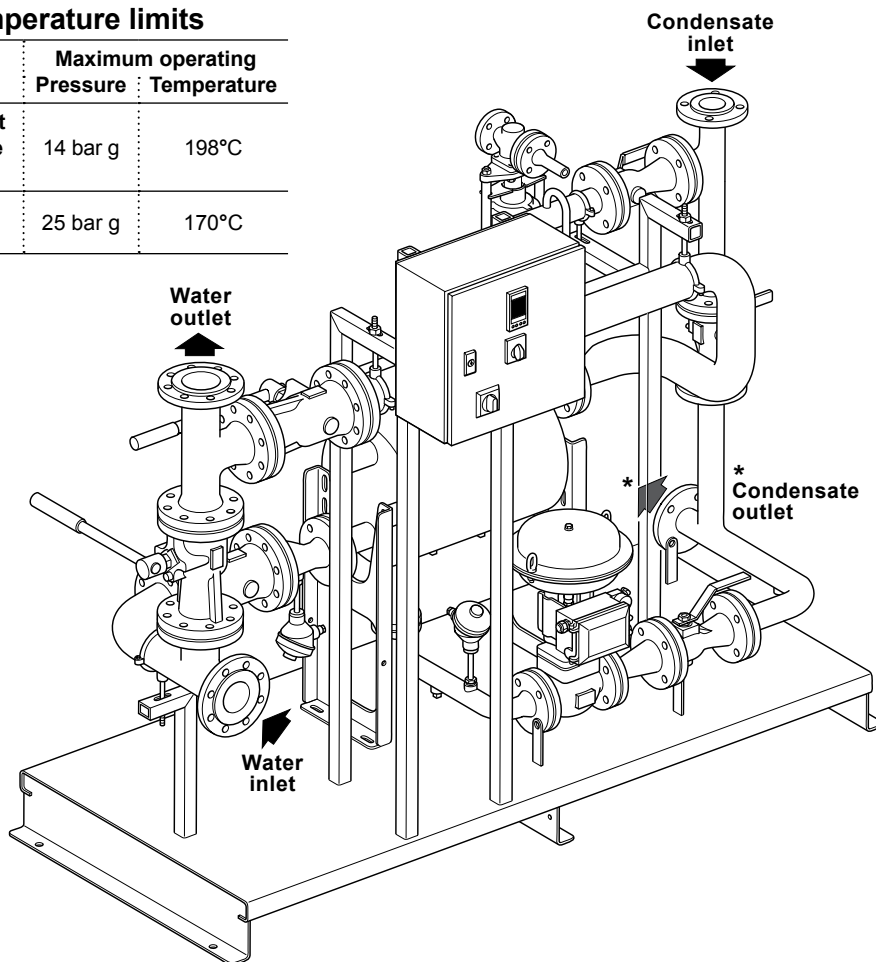
Interconnecting pipework
 Carbon steel

Heat exchanger
 Stainless steel plate,
 carbon steel shell

Isolation valves
 Cast steel

Check valves
 Stainless steel

Frame
 Steel box section



Spirax compact FREME system

The Spirax compact FREME system recovers the useful energy from condensate return and utilises it to pre-heat boiler feedwater, or other process water applications. Standard systems can be provided for boiler duties up to 15,000 kg/h and bespoke systems for larger duties. Systems are supplied fully assembled and pressure tested ready for installation.

Principal benefits:

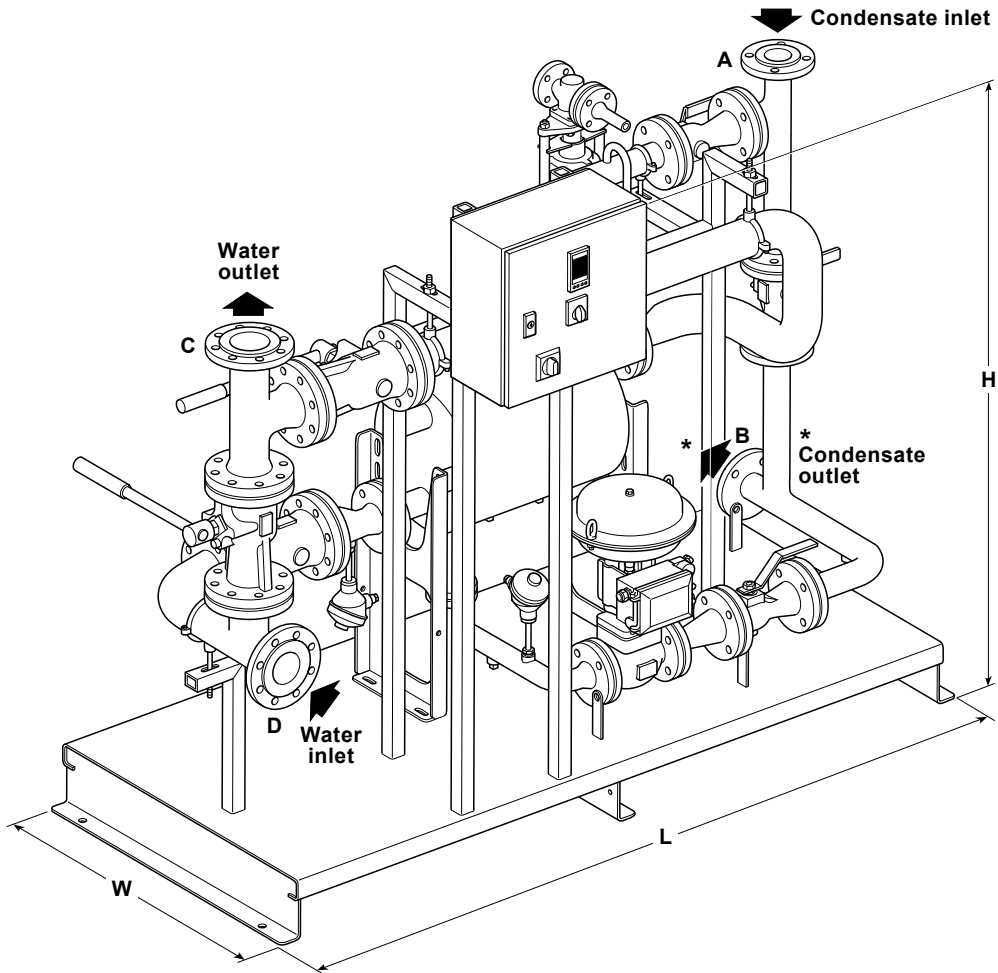
- Reduces steam raising costs, utility bills and CO₂ emissions.
- Reduces or completely removes unsightly plumes of flash steam.
- Significant savings – fuel, water and feedwater chemicals provide rapid return on investment.
- Increases boiler efficiency and reduces boiler blowdown.
- No pumps or complicated controls and instrumentation.
- Helps prevent feedtank boiling and pump cavitation risks.
- Fully assembled skid-mounted system offers minimal installation time and trouble-free commissioning.

Heat exchangers - Plate & Shell heat exchanger, with stainless steel plates, for efficient heat transfer within a very compact size. The heat exchanger is designed to extract heat from the condensate for maximum efficiency and minimal flash steam wastage.

Standards and certification - Spirax compact FREME systems are CE marked and fully comply with the European Pressure Equipment Directive 97 / 23 / EC. Material certification to EN 10204 2.1 and EN 10204 2.2 is available and a data dossier is provided with each system. Note: All certification / inspection requirements must be stated at the time of order placement.

Quality management - The Spirax compact FREME is manufactured under our Quality Management System that meets the requirement of BS EN ISO 9001:2000.

First for Steam Solutions



Dimensions and weights (approximate) in mm and kg

Feedwater flowrate kg/h	Type	Height H	Length L	Width W	Weight kg	Condensate		Water	
						Inlet A	Outlet B	Inlet C	Outlet D
5 000	FR-5000	1705	2040	1043	700	Condensate pipe sizes will need to be calculated, and are unique for each application		DN50	DN50
10 000	FR-10000	1705	2550	1043	750			DN65	DN65
15 000	FR-15000	1705	2550	1043	775			DN65	DN65

Sizing Please contact Spirax Sarco for assistance with application, sizing and selection guidance.

Information required for system appraisal:

- 1. Application
- 2. Maximum boiler capacity, pressure and operating hours
- 3. Type of boiler level control system
- 4. System pressure and temperature
- 5. Fuel type and costs
- 6. Process conditions
- 7. Condensate return rate

Electric and Pneumatics - All control equipment is prewired and piped ready for connection to the power source and air supply:

Supply voltage = 90 to 240 Vac **Air supply** = Clean dry air from 4.5 to 8 bar g

Pipework and frame - All pipework is sized correctly for the application and is fabricated using modern welding techniques, approved welders and weld procedures.

Scale formation - There may be a danger of scale formation in the heat exchangers and pipework. This depends mainly on the water quality, and expert advice from a water treatment specialist should be sought.

Hard water scale in heat exchangers and pipework reduces system efficiency. Chemical cleaning is the only satisfactory method of restoring the heat transfer efficiency by complete removal of the deposits.

Typical specification

The Spirax compact Freme heat recovery solution shall be a Spirax Sarco packaged heat exchanger system with plate & shell heat exchangers. The system shall come complete with heat exchangers and condensate removal equipment. All items shall be pre-assembled and mounted on a compact frame.

How to order

The best way of ensuring that we have all the necessary information for your application is to complete our enquiry data sheet. Copies can be supplied on request.